



## *EPA Region 7 TMDL Review*

**TMDL ID** 278 **Water Body ID** 1016, 1014

**Water Body Name** Kelley Branch/Rocky Fork

**Pollutant** Habitat Loss and Sediment

**Tributary**

**State** MO **HUC** 10900102

**Basin** Rocky Fork Creek Watershed

**Submittal Date** 12/4/2003

**Approved** Yes

### **Submittal Letter**

*State submittal letter indicates final TMDL(s) for specific pollutant(s)/ water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act.*

Submitted as a final TMDL document under a cover letter received December, 4, 2003. A total of two TMDLs were submitted in one document; a sediment TMDL for Rocky Fork, and a habitat loss TMDL for Kelley Branch.

### **Water Quality Standards Attainment**

*The water body's loading capacity for the applicable pollutant is identified and the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources is described. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.*

The impairments of Kelley Branch and Rocky Fork are based on exceedence of the narrative general criteria contained in Missouri's WQS which state: Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses, Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses, and, Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Missouri does not have numeric criteria for sediment or habitat loss, so surrogate targets and a reference condition have been established in these TMDLs to

determine WQS attainment.

#### **Numeric Target(s)**

*Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.*

Applicable WQS, beneficial uses and applicable narrative criteria are fully described. Surrogate targets include fraction of pool volume filled by fine sediment, riffle embeddedness, and aquatic invertebrate community measurements. The target of the TMDLs is a 50% reduction in fine sediment in pools in the impaired segments of the streams, with an ultimate endpoint of fines in those pools to be within 10% of a reference site located in a non-impaired segment of Upper Rocky Fork which is considered a reference condition indicative of meeting all beneficial uses.

#### **Link Between Numeric Target(s) and Pollutant(s) of concern**

*An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety that do not exceed the load capacity.*

A conclusive link between sediment delivery and the quality of aquatic habitat has not been established by EPA or Missouri at this time. A literature review was conducted to determine the approach for quantifying fine sediment in pools; established Missouri protocols are relied upon for conducting stream habitat assessments and semi-quantitative macroinvertebrate stream bioassessments. Attainment of targets will be evaluated using a weight-of-evidence approach between all of the identified surrogate targets and the reference stream condition.

#### **Source Analysis**

*Important assumptions made in developing the TMDL, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, non point and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources*

The impaired streams are located within an abandoned strip-mining area, converted to a State recreational park, in which the State has established more than 70 miles of off-road motorcycle and all-terrain vehicle trails, and a motocross track. The sediment and habitat impairments are primarily due to the use of off-road vehicles; concerns of drainage from abandoned mine land where reclamation efforts have not been entirely successful remain an issue. All sources have been considered and described.

#### **Allocation**

*Submittal identifies appropriate wasteload allocations for point, and load allocations for nonpoint sources. If no point sources are present the wasteload allocation is zero. If no nonpoint sources are present, the load allocation is zero.*

Allocations are described through the use of surrogate targets for sediment.

**WLA Comment**

The waste load allocation is zero.

**LA Comment**

The load allocation is a 50% reduction of fine sediment in pools from the initial condition.

**Margin of Safety**

*Submittal describes explicit and/or implicit margin of safety for each pollutant. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided.*

The MOS is implicit as conservative assumptions are implied in the use of several targets used in the short, medium and long-term goals. Using more than one surrogate provides multiple indicators to more accurately determine when WQS are attained.

**Seasonal Variation and Critical Conditions**

*Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s).*

The WQS applies all year. Seasonal variation has been considered by considering high and low critical flows, sediment movement and delivery, and off-road vehicle use.

**Public Participation**

*Submittal describes public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s).*

Public participation included presentations to the local county Soil and Water Conservation District Board on March 7, 2002, and to local citizens on September 6, 2003. These TMDLs were placed on public notice from August 15, 2003, to September 14, 2003. Several comments were received and the TMDL document was adjusted in response to new information submitted with those comments.

**Monitoring Plan for TMDL(s) Under Phased Approach**

*The TMDL identifies the monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used).*

The State park began implementing BMPs in 2002 to reduce sedimentation in the impaired segments of the streams and essentially is considered part of Phase 1 of these TMDLs. In 2005, sampling sites and the reference location will be chosen and sampled. Phase 2 includes a 2004 assessment of BMPs installed in 2002. Evaluation of BMPs will occur through the use of a spreadsheet tool for estimating pollutant load. Phase 3 completes monitoring by summer 2006. If monitoring indicates further sediment reduction practices are necessary, those will be installed within 3 years of that decision.

**Reasonable assurance**

*Reasonable assurance only applies when reduction in nonpoint source loading is required to meet the prescribed waste load allocations.*

Reasonable assurance is not required for these TMDLs, however, a detailed implementation plan is included in the document to guide best management practices.

---